



absorbent material.

4. The apparatus as recited in claim 1, wherein said channel is formed between two layers of material, each of said layers made of a multi-layered composite material including:

a pair of retainer layers; and

a fluid-absorbing layer between said pair of retainer layers, said fluid-absorbing layer having an inner surface and an outer surface, said inner surface engaging a surface of one of said pair of retainer layers and said outer surface engaging a surface of the other of said pair of retainer layers.

5. The apparatus as recited in claim 1, further comprising a jacket surrounding said channel, said jacket including a fluid-absorbing material.

6. The apparatus as recited in claim 1, further comprising a jacket surrounding said channel, said jacket made of a multi-layered composite material including:

a pair of retainer layers; and

a fluid-absorbing layer between said pair of retainer layers, said fluid-absorbing layer having an inner surface and an outer surface, said inner surface engaging a surface of one of said pair of retainer layers and said outer surface engaging a surface of the other of said pair of retainer layers.

7. The apparatus as recited in claim 1, wherein said temperature-changing means further comprises a refrigerator, a heater, or a thermoelectric device.

8. The apparatus as recited in claim 1, wherein said temperature-changing means further comprises:

an enclosure;

5 a first chamber disposed inside the enclosure and containing a fluid;

a pump disposed inside the first chamber and having an outlet for conveying the fluid;

a second chamber disposed inside the enclosure and containing a heat transfer medium;

10 a first tube extending from the outlet of the pump and capable of conveying the fluid from the pump through the second chamber such that heat transfer between the fluid and the heat transfer medium occurs while the fluid passes through the second chamber;

a vest having an inlet and an outlet and a cavity disposed therebetween, the inlet connected to the first tube such that fluid is capable of flowing from the inlet in the vest to the outlet in the vest through the cavity;

15 a return tube extending from the outlet of the vest to the first chamber such that the fluid returns to the first chamber after passing through the vest;

20 a third chamber having a heat transfer medium therein, the third chamber disposed inside the enclosure and having an inlet and an outlet;

a blower having an outlet capable of engaging with the inlet to the third chamber;

a fourth chamber disposed inside the enclosure adjacent to the third chamber and having a heat transfer medium disposed therein;

25 a filter disposed between the third chamber and the fourth chamber;

a fifth chamber disposed adjacent to the fourth chamber;

a pressure equalization tube extending from the fourth chamber to the fifth chamber;

at least one filter covering an opening between the fourth chamber and the fifth chamber;

5 a sixth chamber disposed adjacent too the fifth chamber and having an outlet with an opening extending too the outside of the enclosure; and

a dividing wall having a plurality of apertures and disposed between the fifth and sixth chamber.

10 9. The apparatus as recited in claim 1, wherein said fluid contains antifreeze.

10. A body heating/cooling apparatus, comprising:

a vest having an inner panel, an outer panel, an inlet, an outlet, and a cavity disposed between said inner and outer panels; and

15 plurality of lengths of a continuous channel disposed in serpentine fashion throughout said cavity, said plurality of lengths of channel being connected to one another by at least one short passageway disposed between the ends of the length of channel, said channel having one end connected to said inlet and the other end connected to said outlet so that fluid is capable of flowing from said inlet to said
20 outlet through said channel, said vest containing a fluid-absorbing material.

11. The apparatus as recited in claim 10, wherein said channel is integrally formed with said front and back panels.

25 12. The apparatus as recited in claim 10, wherein said vest includes a jacket surrounding said channel, said jacket containing said fluid-absorbing material.

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13. The apparatus as recited in claim 10, wherein said fluid-absorbing material has an inner surface and an outer surface, said inner surface engaging a surface of one of a pair of retainer layers and said outer surface engaging a surface of the other of said pair of retainer layers, said fluid-absorbing material and said pair of retainer layers forming a multi-layered composite material.

14. The apparatus as recited in claim 10, wherein said inner and outer panels include said fluid-absorbing material.

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15. The apparatus as recited in claim 14, wherein said fluid-absorbing material has an inner surface and an outer surface, said inner surface engaging a surface of one of a pair of retainer layers and said outer surface engaging a surface of the other of said pair of retainer layers, said fluid-absorbing material and said pair of retainer layers forming a multi-layered composite material.

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16. The apparatus as recited in claim 10, further comprising temperature-changing means adapted for connecting to said vest.

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17. A body heating/cooling apparatus, comprising:

a vest having an inner panel, an outer panel, an inlet, an outlet, and a cavity disposed between said inner and outer panels;

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a plurality of lengths of a continuous channel disposed in serpentine fashion throughout said cavity, said plurality of lengths of channel being connected to one another by at least one short passageway disposed between the ends of the length of channel, said channel having one end connected to said inlet and the other end

connected to said outlet so that fluid is capable of flowing from said inlet to said outlet through said channel, said vest containing a fluid-absorbing material;

an enclosure capable of containing a fluid;

5 a pump disposed inside the enclosure for conveying the fluid, the pump having an inlet and an outlet;

a first tube extending from the outlet of the pump, said first tube connectable to said inlet of said vest; and

10 a return tube extending from the outlet of the vest to the inlet of the pump so that fluid is capable of flowing from the inlet of the vest through said cavity and through said outlet of said enclosure.

18. The apparatus as recited in claim 17, wherein said fluid contains an antifreeze.

15 19. The apparatus as recited in claim 17, wherein said enclosure is coated with a plastic material.

20. The enclosure as recited in claim 17, wherein said first tube has a section formed out of copper.

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